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Prepared for boards of education and municipal planning authorities, school site selection is related to school bus safety. Consideration of direction and density of traffic flow, street crossings, curbing, drainage, road width, parking areas, number of pupils and personnel, number of buses, method of transportation, schedules and extra-curricular activities requiring the use of buses is recommended when evaluating a proposed school site. Factors such as parking, loading place and method, and paving types are recommended by the New Jersey State Department of Highways. Elimination of blind corners and trees or shrubbery that might obstruct vision are important to consider in the development of the selected school site. (HH)

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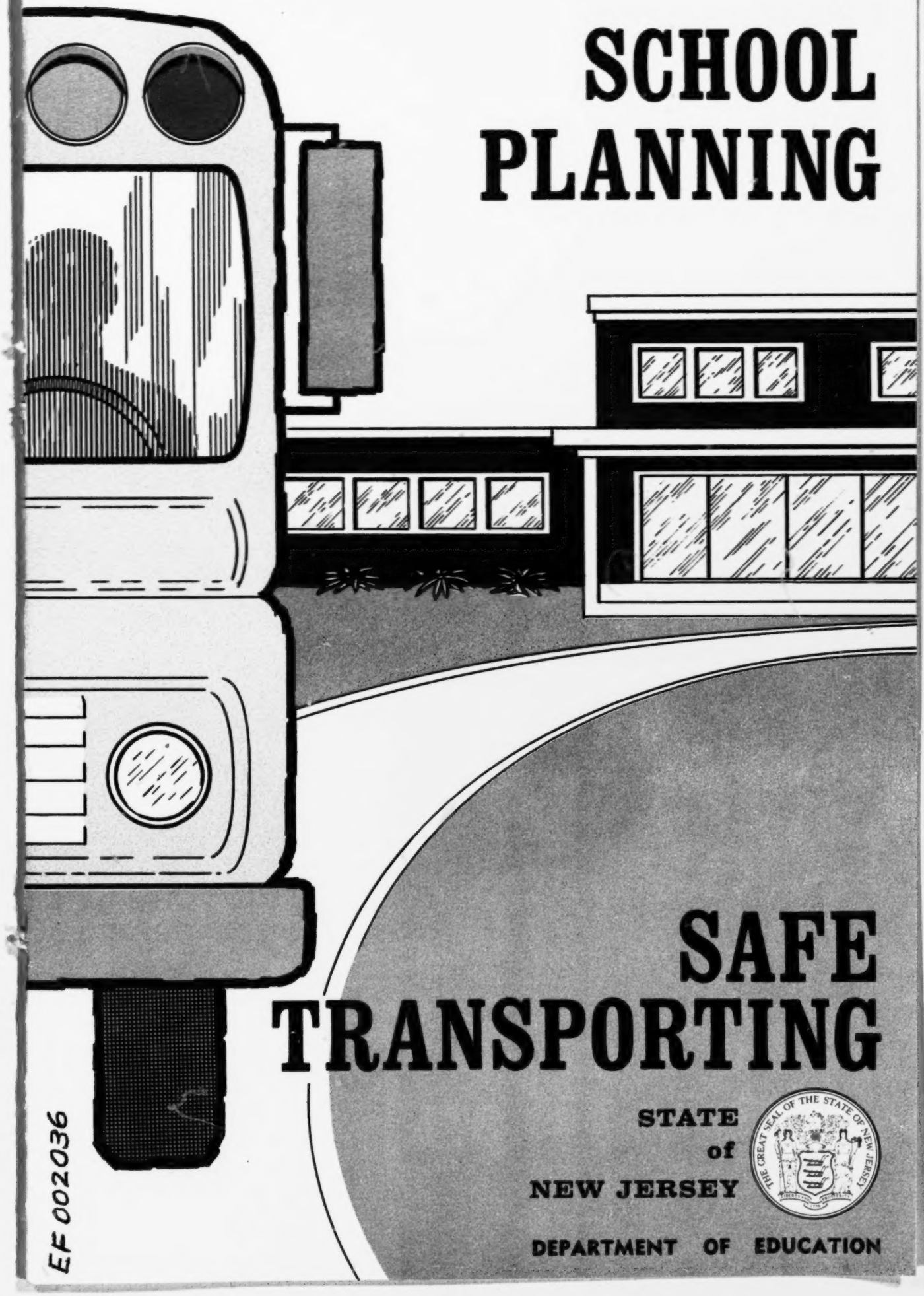

SCHOOL PLANNING

SAFE TRANSPORTING

STATE
of
NEW JERSEY

DEPARTMENT OF EDUCATION

EF 002036

SCHOOL PLANNING
SAFE TRANSPORTING

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Division of Business and Finance
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FOREWORD

Accident statistics have provided New Jersey's Bureau of Transportation with the information that too many of our school buses have been having accidents in and around the school plant in comparison to the exposure of these same buses on our heavily-trafficked, high-speed roadways. School bus drivers, in our in-service workshops, have been adamant in their denial of any lack of caution in the operation of their vehicles while on school property. Logically, it would appear that perhaps we could be incorporating some physical defects into the design and construction of school plants.

Challenged with this problem, a special committee was organized to study and evaluate the selection of school sites with special emphasis on the construction and placement of school plants and roadways. The Committee, after weeks of study, arrived at several conclusions which it wished to submit to local boards of education. The recommendations are contained within the following pages of this pamphlet. It is the hope of the Committee that thoughtful consideration of the contents by interested board members, architects and school administrators might assist in furthering the cause of pupil safety in the schools of New Jersey.

P. G. Parrish

Director of Pupil Transportation

EVALUATING THE SCHOOL PLANT FOR SCHOOL BUS SAFETY

In the selection of school sites, major consideration should be given to the safety of pupils riding school buses. These vehicles will be forced to utilize the roads in and around the school site plus public highways leading into the school area. High density traffic flow near school exits and entrances due to the proximity of super highways, periodic commercial traffic or massive commuter traffic from industrial plants should be avoided. It must be recognized in many cases that the area designated for the school site has been selected prior to the hiring of an architect. It is suggested, therefore, that this Bulletin be issued to boards of education and municipal planning authorities alerting them to the dangers inherent within the process of site selection. It is also suggested that boards of education discuss the selection with the Superintendents of Schools, traffic engineers and the State office of School Plant Planning and solicit their help in evaluating possible school sites.

The location of the school plant on a site should be determined to plan safe means of entrance and egress for all pupils. When boards of education are considering school sites, the state, county and local roads servicing the area should have a minimum 30 foot paved width where loading and unloading is contemplated off the main thoroughfare. If it is necessary to load or unload students on the main thoroughfare in front of the school, at least a 40 foot wide paved road should be provided.

It is possible that boards of education may have land donated to them that could be classified as unsafe for busing due

to its traffic density, type of terrain or lack of safe loading and unloading facilities. The cost of eliminating these unsafe conditions may exceed the purchase price of a more desirable parcel of property. In such instances it might be wiser not to accept the donated land but attempt to secure a site that would provide for the safety of students who would have to be transported to the school for years to come.

All school bus traffic should be considered as a one-way traffic flow preferably in a counter-clockwise direction so as to have the pupils entering or exiting buses on the school side.

Wherever possible, separation should be maintained between bus traffic and the regular flow as constituted by parent, pupil, service and administrative traffic.

Whenever possible, roads should not be constructed that completely circle a school. Areas that students must cross to engage in outside activities should be free of all vehicular traffic.

All school bus roads entering into or exiting from main arteries should have a minimum 100 foot radius turn on inner edge of pavement. Within the school site, roads should have at least a 60 foot radius on inner edge of pavement on all curves. At least a 50 foot tangent section should be provided between reverse curves. The reason is self evident when we understand that school buses are approximately eight feet wide and thirty-five feet long. In order to minimize driveway entrance and exit widths, island construction may be required. Driveway openings must conform to local requirements, and in particular, driveway openings of State highways requires approval by the New Jersey State Highway Department.

It is recommended that curbing, with suitable drainage, be constructed on all roads utilized by the school bus within the

school site. A minimum of 30 feet should be maintained for one-way traffic and 36 feet for two-way traffic. Roads should be wider on all curves.

It is desirable to separate student, administrative and parent parking from the loading zone utilized by the school bus.

In the construction of parking areas, it might be advantageous if only the visitor parking areas were located in close proximity to the school. Care should be exercised in the placement of these areas to preclude the visitor from crossing the school bus traffic pattern.

Architects, prior to the designing and layout of roads and parking lots, should consult with the school administration on the following items:

(a) Total number of pupils and school personnel

(b) Number of present and projected pupils to be transported

(c) Number of buses

(d) Method of transportation

1. District
2. Contract

(e) Type of schedule

1. Staggered
2. Single (one opening and closing time)

(f) Extra-curricular activities that would necessitate use of school buses

Where buses are parked on the school grounds, consideration should be given to the reflective surfaces of windows,

doors and windshields in order to prevent undue glare from these parked vehicles being transmitted to the students in the classroom.

Attention should be given in planning school bus parking and loading areas to encourage diagonal parking. Positioning of buses in slant formation provides the safest method of loading and leaving school grounds. Where this is impossible, bumper to bumper would be the next best solution. Either type of parking should exclude the necessity for backing the school bus.

In the construction of sidewalks for students walking to school, consideration should be given to the elimination of crosswalks in front of buses.

In the analysis of many architects' plans for school buildings, bus canopies were included for consideration. In the majority of cases, such units were not considered feasible for schools with large enrollments. Canopies are advantageous in schools where handicapped children are in attendance.

In the construction of curbs, where school buses will be utilized, consideration should be given to the performance specifications set forth by the State Highway Department.

In areas that will be constantly utilized by heavy-weight school buses, we should adhere to the type of pavement and base as advocated by the Department of Highways.

All roads within the school site should be graded to avoid dips and hollows that would impair the vision of motorists using

the roadways. It is suggested that a maximum standard of not more than a 5% grade be allowed for roads on school sites. At entrance and exit points a maximum grade of 2% should be adhered to.

Vehicular traffic should never be required to swing a blind corner on any school site.

In the planning of a school and the location of roads, conditions should never be set up that would require school buses to be backed on the school premises.

All pupil loading and unloading areas should be provided for within the school site.

Wherever possible, parents should be assigned a separate student pickup point some distance from the school bus loading areas. Accident-prone conditions are created by parents picking up and discharging students haphazardly in the area in front of and adjacent to the building. The condition is greatly increased during inclement weather.

In the provision of loading facilities, consideration should be given to separate areas especially designed for the handicapped and trainable students including entrance ramps and handrails.

In the planning of all roads and loading areas, architects should take into consideration the emergency vehicle which must have access to the school at all times.

Care should be taken in the planting of trees and shrubbery on the school site so as not to obstruct the vision of the motorist.

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